

WHAT IS CLAIMED IS:

1. A method of treating hypertension in a patient, the method comprising administering to the patient a therapeutically effective amount of a nucleic acid which inhibits epoxide hydrolase (EH) gene expression.

2. A method of claim 1, wherein the nucleic acid is complementary to a portion of a human gene encoding EH.

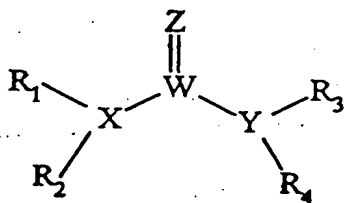
3. A method of claim 1, wherein the nucleic acid is DNA.

4. A method of claim 1, wherein the nucleic acid is RNA.

5. A method of claim 1, wherein the nucleic acid is modified to increase resistance to nucleases.

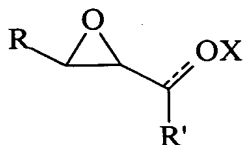
6. A method of delivering a reactive functionality to epoxide hydrolase, said method comprising contacting said epoxide hydrolase with a compound selected from the group consisting of Formula I and of Formula II, wherein

(a) compounds of Formula I have the structure



wherein Z is oxygen or sulfur, W is carbon phosphorous or sulfur, X and Y is each independently nitrogen, oxygen, or sulfur, and X can further be carbon, at least one of R₁-R₄ is hydrogen, R₂ is hydrogen when X is nitrogen but is not present when X is sulfur or oxygen, R₄ is hydrogen when Y is nitrogen but is not present when Y is sulfur or oxygen, R₁ and R₃ are each independently a substituted or unsubstituted alkyl, haloalkyl, cycloalkyl, aryl, acyl, or heterocyclic, and

(b) compounds of Formula II have the structure



14 wherein R is alkyl or aryl, the compound is *trans*- across the epoxide ring,
15 OX is a carbonyl (=O) or hydroxy group (OH) and R' is a H, alkyl or aryl group,
16 and further wherein said compound of Formula I or Formula II is derivatized
17 with a reactive functionality.

1 7. A method of claim 6, wherein the reactive functionality is an alkylating
2 agent or a Michael acceptor

1 8. A method of claim 7, wherein the alkylating agent is a halogen.

1 9. A method of claim 7, wherein the alkylating agent is an epoxide.

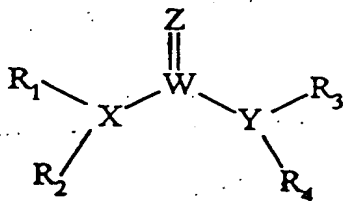
1 10. A method of claim 6, wherein said compound of Formula I or Formula
2 II is derivatized with a Michael acceptor.

1 11. A method of claim 6, wherein said compound is a compound of
2 Formula I.

1 12. A method of claim 6, wherein said compound is a compound of
2 Formula II.

1 13. A method of detecting epoxide hydrolase, said method comprising
2 contacting said epoxide hydrolase with a compound selected from the group consisting of
3 Formula I and of Formula II, wherein

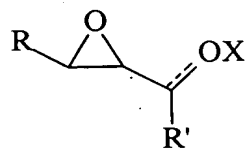
4 (a) compounds of Formula I have the structure



5
6 wherein Z is oxygen or sulfur, W is carbon phosphorous or sulfur, X and Y is
7 each independently nitrogen, oxygen, or sulfur, and X can further be carbon, at least one of
8 R₁-R₄ is hydrogen, R₂ is hydrogen when X is nitrogen but is not present when X is sulfur or
9 oxygen, R₄ is hydrogen when Y is nitrogen but is not present when Y is sulfur or oxygen, R₁
10 and R₃ are each independently a substituted or unsubstituted alkyl, haloalkyl, cycloalkyl, aryl,
11 acyl, or heterocyclic, and

12

(b) compounds of Formula II have the structure



13

14

wherein R is alkyl or aryl, the compound is *trans*- across the epoxide ring,

15

OX is a carbonyl (=O) or hydroxy group (OH) and R' is a H, alkyl or aryl group,

16

and further wherein said compound of Formula I or Formula II is derivatized

17

with a fluorescent or affinity label.